

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) A differential system comprising:

a case defining an interior cavity, said case having a bore communicating with said interior cavity;

a pair of pinion gears positioned within said interior cavity and rotatably coupled to said case;

first and second side gears positioned within said interior cavity in meshing engagement with said pinion gears and rotatably coupled to said case; and

an electromagnetic actuator having a coil moveable within said bore between an engaged position and a disengaged position, said case being drivingly coupled to said first side gear when said coil is in said engaged position.
2. (Original) The differential system of claim 1 wherein said electromagnetic actuator includes an axially slidable ring coupled to said coil, said ring being selectively engageable with said first side gear.
3. (Original) The differential system of claim 2 wherein said ring includes a plurality of dogs that are selectively engageable with a plurality of dogs extending from said first side gear.
4. (Original) The differential system of claim 3 wherein said case includes a removable cap, said cap including a recess within which a portion of said electromagnetic actuator is positioned.

5. (Original) The differential system of claim 4 further including a spring biasing said ring toward a position disengaged from said first side gear.

6. (Original) The differential system of claim 5 wherein said pinion gears rotate about a first common axis and wherein said first and second side gears rotate about a second common axis, said first common axis being positioned substantially orthogonal to said second common axis.

7. (Original) The differential system of claim 6 further including a first shaft drivingly coupled to said first side gear and a second shaft drivingly coupled to said second side gear.

8. (Original) The differential system of claim 5 wherein said pinion gears rotate about axes parallel to and offset from one another.

9. (Original) The differential system of claim 4 further including a non-ferromagnetic spacer positioned between said cap and said ring.

10. (Original) A differential system comprising:
a rotatable case defining an interior cavity;
a pair of pinion gears rotatably supported in said interior cavity;
a pair of side gears rotatably supported in said interior cavity, wherein each of said pinion gears drivingly engages each of said side gears; and
an electrically operable coupling including a moveable electromagnet, said coupling operable for selectively interconnecting one of said side gears to said case in response to movement of said electromagnet.

11. (Original) The differential system of claim 10 further including a controller in communication with said coupling to selectively operate said coupling in response to a vehicle signal.

12. (Original) The differential system of claim 11 wherein said vehicle signal is one of the group consisting of a wheel speed, a wheel speed differential, a transfer case range position, a gear position, a vehicle speed, a brake application or a change in wheel speed.

13. (Original) The differential system of claim 12 further including a ring selectively engageable with said one of said side gears, said ring being rotationally retained by said case and axially moveable relative to said case.

14. (Original) The differential system of claim 13 further including a spring biasing said ring toward a position disengaged from said first side gear.

15 - 21 (Cancelled)

22. (New) A differential system comprising:
a housing defining a chamber and a pair of aligned apertures;
a pair of output shafts having end segments extending through said aligned apertures in said housing and positioned in said chamber;
a gearset operable to transfer rotary power from said housing to said output shafts while permitting speed differentiation therebetween, said gearset being retained in said chamber and including first and second side gears drivingly engaged with said end segments of said output shafts;

an electrically operable coupling including an actuating ring fixed to an electromagnet, said actuating ring and said electromagnet being axially moveable between a first position where said actuating ring drivingly interconnects said housing

and said first side gear and a second position where said actuating ring is clear of said first side gear.

23. (New) The differential system of claim 22 wherein said actuating ring includes a plurality of projections selectively engageable with projections extending from said first side gear.

24. (New) The differential system of claim 23 further including a spring urging said actuating ring away from said first side gear.

25. (New) The differential system of claim 24 wherein said first and second side gears are in constant meshing engagement with first and second pinion gears.

26. (New) The differential system of claim 25 wherein said housing includes a case and a cap, said cap and said case each including radially extending flanges coupled to one another.

27. (New) The differential system of claim 26 wherein said actuating ring is slidably captured within a pocket formed between said cap and said case.